

**IN THE CLAIMS:**

**Please amend the claims as follows:**

Please cancel claims 1 and 3 - 9, 12 – 17 without prejudice.

(All the pending claims are here under reproduced).

1. (Canceled)

2. (Currently amended) ~~[The in-situ plasma cleaning device of claim 1]~~ An in-situ plasma cleaning device for performing an atomic surface cleaning process to remove contaminants, comprising:

a cleaning assembly;

a magnetic field generator, located within the cleaning assembly, that generates a generally axially directed magnetic field to provide a plasma for cleaning a surface within the cleaning assembly;

wherein the cleaning assembly comprises a collector shield disposed opposite to the surface to be cleaned for collecting the contaminants and by-product material, wherein the cleaning assembly traverses the length of a target cylindrical surface and a substrate cylindrical surface during a cleaning process.

3. - 9. (Cancelled)

10. (Currently amended) [The in-situ plasma cleaning device of claim 1] An in-situ plasma cleaning device for performing an atomic surface cleaning process to remove contaminants, comprising:

a cleaning assembly;

a magnetic field generator, located within the cleaning assembly, that generates a generally axially directed magnetic field to provide a plasma for cleaning a surface within the cleaning assembly;

wherein the cleaning assembly comprises a collector shield disposed opposite to the surface to be cleaned for collecting the contaminants and by-product material, wherein the atomic surface cleaning of the in-situ plasma cleaning device is performed in a closed volume process to eliminate a possibility of recontamination.

11. (Currently amended) [The in situ plasma cleaning device of claim 1] An in-situ plasma cleaning device for performing an atomic surface

cleaning process to remove contaminants, comprising:

a cleaning assembly;

a magnetic field generator, located within the cleaning assembly, that generates a generally axially directed magnetic field to provide a plasma for cleaning a surface within the cleaning assembly;

wherein the cleaning assembly comprises a collector shield disposed opposite to the surface to be cleaned for collecting the contaminants and by-product material, wherein the plasma is tuned to attain predetermined properties for a target material and a substrate material.

12. – 17. (Canceled).